

ABSTRACT

The present invention alleviates stiction between a suspended beam or microstructure and an underlying substrate by providing a patterned passivation layer on the substrate underneath the beam. The passivation layer is patterned to provide a substrate surface that differs substantially from the bottom surface of the beam. The difference between these two surfaces reduces the potential contact area between the beam and the substrate when the beam is pulled down, thereby reducing adhesive forces between the beam and the substrate and reducing the likelihood of stiction. In one embodiment, the passivation layer is patterned to form a substrate surface comprising a plurality of protuberances. In another embodiment, the passivation layer is patterned to form a substrate surface having a mesh pattern.